



Atty Dkt. No.: UCAL-203
USSN: 09/828,505

I. AMENDMENTS

IN THE CLAIMS

Cancel claims 1, 6, 8, 9, 11-13, 15-18, 19, 22, and 26 without prejudice to renewal.

Please enter the amendments to claims 2-5, 7, 10, 14, 20, 21, 23-25, and 27-32, as shown below.

Please enter new claim 33, as shown below.

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1. (Canceled)

B. 2. (Currently Amended) A polynucleotide composition comprising a nucleic acid encoding a plant allergen derived from a non-host species of a first phylum or first kingdom ~~The polynucleotide vaccine of claim 1,~~ wherein the nucleic acid ~~sequence~~ encoding the plant allergen antigen is further modified to include a signal sequence derived from a second phylum or second kingdom, wherein the signal sequence is operably linked to the allergen-encoding antigen-encoding sequence.

3. (Currently Amended) The polynucleotide composition ~~vaccine~~ of claim 2, wherein the signal sequence comprises a hemagglutinin A (HA) signal sequence.

4. (Currently Amended) The polynucleotide composition ~~vaccine~~ of claim 2 ~~1~~, wherein at least one codon of the nucleic acid ~~sequence~~ encoding the plant allergen antigen is modified from a wild type sequence of the non-host species to an analogous codon of a host species.

5. (Currently Amended) The polynucleotide composition ~~vaccine~~ of claim 2 ~~1~~, further comprising a universal antigen or an immunogenic fragment thereof.

6. (Canceled)

7. (Currently Amended) The polynucleotide composition ~~vaccine~~ of claim 2 ~~1~~, wherein the antigen is Amb a1.

8-9. (Canceled)

10. (Currently Amended) A method for ~~modulating an~~ reducing a Th2 immune response to a plant allergen, ~~an antigen~~ comprising administering to a subject an effective amount of a polynucleotide composition vaccine of claim 2 + and an effective amount of an immunostimulatory nucleotide sequence (ISS) comprising an unmethylated 5'-CG-3' nucleotide sequence in an amount effective to modulate an to reduce a Th2 immune response to the allergen antigen.

11-13. (Canceled)

B 14. (Currently Amended) The method of claim 10 ~~13~~, wherein the plant allergen is ragweed or grass pollen.

15-19. (Canceled)

20. (Currently Amended) The method of claim 10 ~~19~~, wherein the ISS comprises a sequence selected from the group consisting of: 5'-rrcgyy-3', 5'-rycgyy-3', 5'-rrcgyycg-3', 5'-rycgyycg-3' and or 5'-(TCG)_n-3'.

21. (Currently Amended) The method of claim 20, wherein the sequence is AACGTT ~~selected from the group consisting of: AACGTT, AGCGTT, GACGTT, GCGGTT, AACGTC, AGCGTC, GACGTC, GCGGTC, AACGCC, AGCGCC, GACGCC, GCGGCC, AACGCT, AGCGCT, GACGCT, GCGGCT, ATCGTT, ACCGTT, GTCGTT, GCCGTT, ATCGTC, ACCGTC, GTCGTC, GCCGTC, ATCGCT, ACCGCT, GTCGCT, GCCGCT, ATCGCC, ACCGCC, GTCGCC, GCCGCC, AACGTTTCG, AGCGTTTCG, GACGTTTCG, GCGGTTTCG, AACGTCCG, AGCGTCCG, GACGTCCG, GCGGTCCG, AACGCCCCG, AGCGCCCCG, GACGCCCCG, GCGGCCCCG, AACGCTCG, AGCGCTCG, GACGCTCG, GCGGCTCG, ATCGTTTCG, ACCGTTTCG, GTCGTTTCG, GCCGTTTCG, ATCGTCCG, ACCGTCCG, GTCGTCCG, GCCGTCCG, ATCGCTCG, ACCGCTCG, GTCGCTCG, GCCGCTCG, ATCGCCCCG, ACCGCCCCG, GTCGCCCCG and GCGGCCCCG.~~

22. (Canceled)

23. (Currently Amended) A polynucleotide composition comprising a nucleic acid encoding an Amb a1 allergen modified by deletion of a native Amb a1 signal sequence. ~~The polynucleotide vaccine of claim 22,~~ wherein the nucleic acid ~~sequence~~ encoding the Amb a1 allergen is further modified to comprise a heterologous signal sequence operably linked to the Amb a1 allergen-encoding sequence.

24. (Currently Amended) The polynucleotide composition ~~vaccine~~ of claim 23, wherein the heterologous signal sequence comprises a hemagglutinin A (HA) signal sequence.

25. (Currently Amended) The polynucleotide composition ~~vaccine~~ of claim ~~23~~ 22, wherein at least one codon of the nucleic acid sequence encoding the Amb a1 allergen is modified from a wild type sequence of the Amb a1 allergen to an analogous human codon.

26. (Canceled)

27. (Currently Amended) A polynucleotide composition comprising:
a polynucleotide comprising a nucleic acid sequence encoding plant allergen derived from a first phylum or first kingdom, wherein the nucleic acid sequence encoding the plant allergen is modified by deletion of a native signal sequence; and

an immunomodulatory nucleic acid molecule comprising the sequence 5'-cytosine-guanine-3'
~~The polynucleotide vaccine composition of claim 26,~~ wherein the nucleic acid sequence encoding the plant allergen antigen is further modified to include a heterologous signal sequence derived from a second phylum or second kingdom, wherein the signal sequence is operably linked to the antigen-encoding sequence.

28. (Currently Amended) The polynucleotide ~~vaccine~~ composition of claim 27, wherein the heterologous signal sequence comprises a hemagglutinin A (HA) signal sequence.

29. (Currently Amended) The polynucleotide ~~vaccine~~ composition of claim ~~27~~ 26, wherein at least one codon of the nucleic acid sequence encoding the plant allergen antigen is modified from a wild type sequence of the non-host species to an analogous codon of a host species.

30. (Currently Amended) The polynucleotide ~~vaccine~~ composition of claim 27 ~~26~~, wherein the plant allergen antigen is Amb a1.

31. (Currently Amended) The polynucleotide ~~vaccine~~ composition of claim 27 ~~26~~, wherein the immunomodulatory nucleic acid molecule comprises a sequence selected from the group consisting of 5'-rrcgyy-3', 5'-rycgyy-3', 5'-rrcgyycg-3', 5'-rycgyycg-3' or 5'-(TCG)n-3'.

32. (Currently Amended) The polynucleotide ~~vaccine~~ composition of claim 27 ~~26~~, wherein the immunomodulatory nucleic acid molecule comprises a the sequence AACGTT ~~selected from the group consisting of:~~ ~~AACGTT, AGCGTT, GACGTT, GCGGTT, AACGTC, AGCGTC, GACGTC, GCGGTC, AACGCC, AGCGCC, GACGCC, GCGGCC, AACGCT, AGCGCT, GACGCT, GCGGCT, ATCGTT, ACCGTT, GTCGTT, GCCGTT, ATCGTC, ACCGTC, GTCGTC, GCCGTC, ATCGCT, ACCGCT, GTCGCT, GCCGCT, ATCGCC, ACCGCC, GTCGCC, GCCGCC, AACGTTCCG, AGCGTTCCG, GACGTTCCG, GCGGTTCCG, AACGTCCG, AGCGTCCG, GACGTCCG, GCGGTCCG, AACGCCCCG, AGCGCCCCG, GACGCCCCG, GCGGCCCCG, AACGCTCG, AGCGCTCG, GACGCTCG, GCGGCTCG, ATCGTTCCG, ACCGTTCCG, GTCGTTCCG, GCCGTTCCG, ATCGTCCG, ACCGTCCG, GTCGTCCG, GCCGTCCG, ATCGCTCG, ACCGCTCG, GTCGCTCG, GCCGCTCG, ATCGCCCCG, ACCGCCCCG, GTCGCCCCG and GCCGCCCCG.~~

[Please enter new claim 33, as shown below.]

--33. (New) The method of claim 10, wherein the level of IgE specific for the plant allergen is reduced. --